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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,483	11/05/2003	Akio Aoyama	NEC03P166-RIa	7753
21254 7590 11/10/2011 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER CASCA, FRED A	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 11/10/2011	DELIVERY MODE PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/700,483
Filing Date: November 05, 2003
Appellant(s): AOYAMA.

Frankie Frederick E. Cooperrider
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 29, 2011 appealing from the Office action mailed January 20, 2011.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after Final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

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Ma	U.S. Pub. No.2003/0148765 A1	February 06, 2002
Tong	U.S. Pub. No. 2001/0034236 A1	January 18, 2001
Mile'n	U.S. Pat No. 6628642 B2	August 25, 1999
Lee	U.S. Pat No.6301234 B2	May 14, 1998
Jeong	U.S. Pat No. 6195552 B2	May 24, 1999
Imai	U.S. Pat No. 7050482 B2	April 06, 2001

Admitted Prior Art (Applicant's Specification pages 1 line 10 through page 5, line 6)

Text book, Wireless Communications, by Rappaport (ISBN#: 013-042232-0), particularly pages 6-8 and pages 66-68, Published in 2002.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20-26, 39-45, 62-63, 68-69 and 74-87 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Independent claim 20 has been amended to contain new matter. The phrase “as data for developing a service map of said radio communication system, each said predetermined criterion providing data for a different service map” added to independent claim 20 has not been described in the specification.

Further, independent claim 39 has been amended to contain new matter. The phrase “each of criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system” added to independent claim 39 has not been described in the specification.

Further, new independent claims 80 and 81 contain new matter. The phrase “wherein the measurement information includes information relating to at least one of a reception quality and an intensity of a radio signal and information relating to a location of the mobile radio terminal” in each of claim 80 and 81 has not been described in the specification.

Further, the contents of new dependent claims 74-79, 84, 85, 86 and 87 have not been described in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-7, 39-40, 43-45, 49,50, 53-57, 62, 63, 68-73 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy et al (US 2004/0203855 A1) in view of Ma

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et al (US 2003/0148765 A1) and further in view of Admitted Art, particularly, Specification, page 2, line 13-page 3, line 7 (hereinafter AA).

Referring to claim 1, Veerasamy discloses a method of collecting information used with an information collecting server in a radio communication system connected to at least one mobile radio terminal for performing user communications (abstract and Par. 7, Fig. 1, “server 195”), comprising:

in said mobile radio terminal, monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel, which satisfies predetermined criteria (Fig. 1 and par. 31-32, 33-35, 61-63, particularly, par. 33, line 9-12 and par. 34, lines 2-3, “MS 113 ... in communication with BS 102”, “detects RF holes ... relays GPS position”, note that the mobile terminal reports call drop, thus it monitors its communication status. Further note that a communication status changes either due to a call drop in an RF hole for loss of signal or due to a handoff because of decreased signal strength. Thus, the criteria is signal loss (due to RF hole) or decreased signal strength (handoff)),

detecting as a trigger when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria (Fig. 1 and par. 31-32, 33-35, 61-63, “detect RF holes,” “call dropped,” note that the call drop is the predetermined condition); said predetermined condition being predefined as useful information within a service area of aid radio communication system (Fig. 1 and par. 31-32, 33-35, 61-63, note that the detecting of RF holes and call drops is used in RF mapping)

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acquiring a coordinate position of said mobile radio terminal and sending measured information including coordinate position to said information collecting server ((Par. 35 and 36, “relays the GPS position ... to RF coverage server”).

Veerasamy does not specifically disclose acquiring a reception status of a radio signal when trigger is detected and sending the reception status to the collecting server in the format claimed.

Ma discloses acquiring a reception status of a radio signal when a trigger is detected and sending the reception status to the collecting server (fig. 4 and Par. 36, lines 1-4).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Veerasamy in the format claimed, for the purpose of providing an efficient communication system.

Veerasamy does not specifically disclose the information is used and related to at least one adjustment.

However, Admitted Art (AA) discloses this feature (Specification, page 2, line 13-page 3, line 7, “maintenance and adjustments”).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the combination in the format claimed, for the purpose of providing an efficient communication system.

Referring to claim 2, combination of Veerasamy/Ma/AA discloses the method according to claim 1, and further disclose predetermined condition comprises an occurrence of a forced disconnection of the user communication (Veerasamy, Par. 34-35, “holes”).

Referring to claim 5, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically disclose the predetermined condition is a call which is made. The combination discloses that the predetermined condition is handover of a call from a first base station to another base station (Veerasamy, Par. 33).

It would have been an obvious design choice to modify the invention of Veerasamy/Ma by limiting the predetermined condition to a call initiation condition since the applicant has not disclosed that having the predetermined condition being call made solves any stated problems or is for any particular purpose and it appears that handover being set as a precondition would perform equally well as the predetermined condition since a handover inherently comprises a call set up with the target base station.

Referring to claim 6, combination of Veerasamy/Ma/AA discloses the method according to claim 1 and further discloses in said information collecting server, sending value information indicative of a value given for said measured information, which is provided to said mobile radio terminal when said measured information is received; and in said mobile radio terminal, displaying the value indicated by said value information when said value information is received (Veerasamy, par. 55-58 and 71, and Ma fig. 1-4).

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Referring to claim 7, combination of Veerasamy/Ma/AA discloses the method according to claim 1, and further disclose the radio communication system comprises a CDMA radio communication system (Veerasamy, par. 24, “CDMA”).

Referring to claim 39, Veerasamy discloses a mobile radio terminal for sending information used for adjustments in a radio communication system for performing user communications to an information collecting server (abstract and Par. 7, Fig. 1, “server 195”), comprising:

a communication status acquisition unit that acquires a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel, which satisfies predetermined criteria (Fig. 1 and par. 31-32, 33-35, 61-63, particularly, par. 33, line 9-12 and par. 34, lines 2-3, “MS 113 ... in communication with BS 102”, “detects RF holes ... relays GPS position”, note that the mobile terminal reports call drop, thus it monitors its communication status. Further note that a communication status changes either due to a call drop in an RF hole for loss of signal or due to a handoff because of decreased signal strength. Thus, the criteria is signal loss (due to RF hole) or decreased signal strength (handoff)) ; each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system (Par. 35, 50, 51, and 36, and 61);

a positional information acquisition unit that acquires a coordinate position of the mobile radio terminal (Par. 35 and 36, 61 and Figure 4, “relays the GPS position ... to RF coverage server”); and a control unit, triggerable when a change of said communication status acquired by

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said communication status acquisition unit has satisfied a predetermined condition, that instructs said reception status acquisition unit to instruct said positional information acquisition unit to acquire said coordinate position (Par. 35 and 36, 61 and Figure 4, “relays the GPS position ... to RF coverage server”), and, when said reception status and said coordinate position are acquired, sending information including said coordinate position to said information collecting server (Par. 35 and 36, 61 and Figure 4, “relays the GPS position ... to RF coverage server”).

Veerasamy does not specifically disclose a reception status acquisition unit that acquires a reception status of a radio signal; and instructs said reception status acquisition unit to acquire said reception status and sending said reception status, as claimed.

Ma discloses a reception status acquisition unit that acquires a reception status of a radio signal; and instructs said reception status acquisition unit to acquire said reception status and sending said reception status (fig. 4 and Par. 36, lines 1-4).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Veerasamy in the format claimed, for the purpose of providing an efficient communication system.

Veerasamy does not specifically disclose the information is used determining adjustments as claimed.

However, Admitted Art (AA) discloses this feature (Specification, page 2, line 13-page 3, line 7, “maintenance and adjustments”).

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It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the combination in the format claimed, for the purpose of providing an efficient communication system.

Claims 40, and 45 recite features analogous to the features of claims 2 and 7. Thus, the combination of Veerasamy/Ma discloses all elements of claims 40 and 47.

Claims 49 recites features analogous to the features of claim 39. Thus, the combination of Veerasamy/Ma/AA discloses all elements of claim 49.

Claims 50 and 55 recite features analogous to the features of claims 2 and 7. Thus, the combination of Veerasamy/Ma/AA discloses all elements of claims 50 and 55.

Claims 44 and 54 recite features analogous to the features of claim 6. Thus, they are rejected for the same reason as set forth above.

Claims 43 and 53 recite features analogous to the features of claim 5 (as rejected above). Thus, they are rejected for the same reason as set forth above.

Referring to claim 56, combination of Veerasamy/Ma/AA discloses the method according to claim 1, and inherently disclose acquiring a reception status further includes acquiring at least one of a received signal quality and a received signal intensity of a common channel (par. 24 and 33).

Referring to claim 57, combination of Veerasamy/Ma discloses the method according to claim 1, and further disclose acquiring said coordinate position information further includes

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acquiring coordinate information of said mobile radio terminal by using Global Positioning System (Par. 36, “GPS”).

Claims 62, 64, 66 and 70 recite features analogous to the features of claim 56. Thus, Thus, they are rejected for the same reason as set forth above.

Claims 59, 63, 69, 71 and 73 recite features analogous to the features of claim 57. Thus, Thus, they are rejected for the same reason as set forth above.

Referring to claim 83, combination of Veerasamy/Ma/AA discloses the method according 1, and further discloses wherein said sent information further includes time information (Veerasamy, Par. 33-36).

4. Claims 20, 21, 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy et al (US 2004/0203855 A1) in view of Ma et al (US 2003/0148765 A1).

Referring to claim 20, Veerasamy discloses a system for collecting information used for adjustments in a radio communication system for performing user communication (abstract and Par. 7, Fig. 1, “server 195”), comprising: at least one mobile radio terminal that monitors a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel, which satisfies predetermined criteria (Fig. 1 and par. 31-32, 33-35, 61-63, particularly, par. 33, line 9-12 and par. 34, lines 2-3, “MS 113 ... in communication with BS 102”, “detects RF holes ... relays GPS position”, note that the mobile terminal reports call drop, thus it monitors its communication status. Further note that a communication status changes either due to a call drop in an RF hole for loss of signal or due to a handoff because of decreased signal strength. Thus, the criteria is signal loss (due to RF hole)

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or decreased signal strength (handoff)), and if a trigger is detected when a change of said communication status has satisfied a predetermined condition (par. 34, 61, “detect RF holes,” “call dropped,” note that the call drop is the predetermined condition), acquires a coordinate position of the mobile radio terminal, and sends information including said coordinate position (Par. 35 and 36, 61 and Figure 4, “relays the GPS position ... to RF coverage server”); and an information collecting server that receives said information from said mobile radio terminal (figures 1-4 and Par. 61 and 33-35), wherein the information which has been received is recorded as collected information as data for developing a service map of said radio communication system (Par. 35, 50, 51, and 36, and 61).

Veerasamy does not specifically disclose acquiring a reception status of a radio signal when trigger is detected and sending the reception status to the collecting server in the format claimed.

Ma discloses acquiring a reception status of a radio signal when a trigger is detected and sending the reception status to the collecting server (fig. 4 and Par. 36, lines 1-4).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Veerasamy in the format claimed, for the purpose of providing an efficient communication system.

Veerasamy does not specifically disclose each said predetermined criterion providing data for different service map.

However, Veerasamy discloses that the limitation of building a database of the of the call drops and/or service drop positions and then using the database Veerasamy builds a coverage map of the area that illustrates the location of RF holes (see par. 35). Veerasamy further

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suggests sending of pilot signal strength (par. 32). And Ma discloses a mobile station reporting signal strength message when it detects a handoff (see Par. 36). Further, one skilled in the art would recognize that the map of Veerasamy which is configured to illustrate RF holes and signal block areas that cause the RF hole can also be expanded to also illustrate the coverage areas that have decreased signal strength because both the communication disconnection due to RF hole and the handoff due to signal attenuation are signal fluctuations and it would make sense to illustrate in the map both the criterion of signal loss and the criterion of major attenuations.

It would have been obvious to one of skilled in the art at the time of invention of modify the combination by incorporating the teachings of Ma and the general knowledge of an ordinary skill in the art such that the mapping of each of the predetermined criterion would provide data for a different service map, and thus allowing the radio coverage monitoring to have a clear understanding of the RF hole zones and also decreased signal zones, and thus providing an efficient communication system.

Claim 25 recite features analogous to the features of claim 6. Thus, it is rejected for the same reason as set forth above.

Claims 24 recites features analogous to the features of claim 5 (as rejected above). Thus, it is rejected for the same reason as set forth above.

Claims 21 and 26 recite features analogous to the features of claims 2 and 7. Thus, the combination of Veerasamy/Ma discloses all elements of claims 21 and 26.

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5. Claims 3-4, 22-23, 41-42 and 51-52, 74-79 and 84-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy et al (US 2004/0203855 A1) in view of Ma et al (US 2003/0148765 A1), further in view of Admitted Art, particularly, Specification, page 2, line 13- page 3, line 7 (hereinafter AA) and further in view of well known prior art (MPEP 2144.03).

Referring to claim 3, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

Veerasamy does not specifically disclose the predetermined condition comprises an occurrence of a handover failure.

The examiner takes official notice of the fact that handover failure is a well known reason for call drops.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed by modifying the call loss of Veerasamy by handover failure, for the purpose determining locations that handover failure occurs and thus reducing handover failures.

Referring to claim 4, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

Veerasamy does not specifically disclose predetermined condition comprises the lowering of a throughput of said user communication below a predetermined threshold value.

The examiner takes official notice of the fact that setting measurement of throughput e.g., throughput compared to a threshold is well known in the art.

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It would have been obvious to one of the ordinary skill in the art to modify the combination in the format claimed, for the purpose of maintaining quality communication sessions and thus providing an efficient communication system.

Claims 14-15 recite features analogous to the features of claims 3-4. Thus, the combination of Veerasamy/Ma and well known art discloses all elements of claims 14-15.

Claims 22-23 recite features analogous to the features of claims 3-4. Thus, the combination of Veerasamy/Ma and well known art discloses all elements of claims 22-23.

Claims 33-34 recite features analogous to the features of claims 3-4. Thus, the combination of Veerasamy/Ma and well known art discloses all elements of claims 33-34.

Claims 41-42 recite features analogous to the features of claims 3-4. Thus, the combination of Veerasamy/Ma and well known art discloses all elements of claims 41-42.

Claims 51-52 recite features analogous to the features of claims 3-4. Thus, the combination of Veerasamy/Ma and well known art discloses all elements of claims 51-52.

Referring to claim 74, 75 and 76 combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination is silent on wherein said sending information to said information collecting server occurs immediately upon said trigger, said predetermined condition having been preset to permit said information to be sent to said information collecting server without said mobile radio terminal having first lost said existing communication connection (as claimed in claim 74), wherein said trigger results from a condition causing a loss of said existing communication connection and said sending information to said information collecting server occurs immediately upon regaining a new

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communication connection (as claimed in claim 75) and wherein said predetermined criteria comprises a plurality of conditions causing triggers for said sending information to said information collecting server (as claimed in claim 76).

However, the examiner takes official notice of the fact that the above features of claims 74, 75 and 76 are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 77, combination of Veerasamy/Ma/AA discloses the method according to claim 76.

The combination does not disclose wherein each said condition permits a different mapping condition for said radio communication system, thereby permitting a plurality of maps for an area serviced by said radio communication system to be developed.

The examiner takes official notice of the fact the features of claim 77 are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 78, combination of Veerasamy/Ma/AA discloses the method according to claim 77.

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The combination does not disclose retrieving data stored in said information collecting server; and using said retrieved data to develop at least one map for said area serviced by said radio communication system.

The examiner takes official notice of the fact these features are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 79, combination of Veerasamy/Ma/AA discloses the method according to claim 76.

The combination does not specifically disclose said plurality of conditions comprising at least two of a preset condition for: a received signal power vs. interference power ratio per chip (E_c/I_o) indicative of a received signal quality of a common pilot channel; a received signal intensity in a common pilot channel; an event of a forced shut down of a communication; an indication that said mobile radio terminal is unable to make an outgoing call; an indication of a handover failure; an indication of a level of a communication throughput; and an indication of a start of a call.

The examiner takes official notice of the fact these features are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 79, combination of Veerasamy/Ma/AA discloses the method according to claim 76.

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The combination does not specifically disclose said plurality of conditions comprising at least two of a preset condition for a received signal power vs. interference power ratio per chip (E_c/I_o) indicative of a received signal quality of a common pilot channel; a received signal intensity in a common pilot channel; an event of a forced shut down of a communication; an indication that said mobile radio terminal is unable to make an outgoing call; an indication of a handover failure; an indication of a level of a communication throughput; and an indication of a start of a call.

The examiner takes official notice of the fact the features of claim 79 are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 84, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically discloses said sending information occurs only from users who have provided consent for such information sending such that dedicated software has been installed only on mobile radio terminals of consenting users.

The examiner takes official notice of the fact the features of claim 84 are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

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Referring to claim 85, combination of Veerasamy/Ma/AA discloses the method according to claim 84.

The combination does not specifically transmitting valuable points as consideration to users sending information to said information collecting server.

The examiner takes official notice of the fact these features are well known in the art. It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 86, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically the information collecting server transmits said trigger so that a plurality of mobile radio terminals simultaneously start measuring information and sending the measured information to the information collecting sever.

The examiner takes official notice of the fact these features are well known in the art. It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 87, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically the predetermined criteria include at least one of signal loss and a lowering of said signal reception.

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The examiner takes official notice of the fact the features of claim 87 are well known in the art. It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 88, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically predetermined criteria allow for a mapping of said service area of said system.

The examiner takes official notice of the fact the features of claim 87 are well known in the art. It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

Referring to claim 89, combination of Veerasamy/Ma/AA discloses the method according to claim 1.

The combination does not specifically the predetermined criteria allow for other than a handoff operation for the mobile radio terminal.

The examiner takes official notice of the fact the features of claim 87 are well known in the art. It would have been obvious to one of the ordinary skill in the art at the time of invention of modify the combination in the format claimed for the purpose of providing an efficient communication system.

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6. Claims 80-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy et al (US 2004/0203855 A1) in view of Mile's et al (US 6,628,642).

Referring to claim 80, Veerasamy discloses a method of reporting measurement information measured by a mobile radio terminal (abstract and Par. 7, Fig. 1, "server 195"), said method comprising:

monitoring a communication status of the mobile radio terminal (Fig. 1 and par. 31-32, 33-35, 61-63, particularly, par. 33, line 9-12 and par. 34, lines 2-3, "MS 113 ... in communication with BS 102", "detects RF holes ... relays GPS position"), detecting a deterioration of the communication status (Fig. 1 and par. 31-32, 33-35, 61-63, "detect RF holes," "call dropped"); and reporting measurement information corresponding to the detected deterioration (Fig. 1 and par. 31-32, 33-35, 61-63), wherein the measurement information includes information relating to at least one of a radio signal and information relating to a location of the mobile radio terminal (par. 31-35, "location").

Veerasamy does not specifically disclose that the measurement information includes information relating to at least one of a reception quality and an intensity.

However, Mil'n discloses this feature (Col. 1, lines 51-67, "mobile station ... will typically ... to measure and report signal strength").

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Veerasamy in the format claimed, for the purpose of providing an efficient communication system.

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Claim 81 recites features analogous to the features of claim 80 (as rejected above). Thus, it is rejected for the same reason as set forth above.

7. Claims 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy et al (US 2004/0203855 A1) in view of Mile's et al (US 6,628,642) and further in view of well known art (MPEP 2144.03).

Referring to claim 82, the combo of Veerasamy/Mile'n discloses the mobile radio terminal of claim 81.

The combo is silent on wherein said reception quality and said intensity of the radio signal comprises a received signal quality and a received signal intensity of a common pilot channel.

The examiner takes official notice of the fact that reception quality and intensity of the radio signal comprising a received signal quality and a received signal intensity of a common pilot channel. is well known in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the above combination as claimed for the purpose of complying with conventional radio communication measuring techniques and thus providing an efficient communication system.

(11) Response to Arguments

A. Rejection under 35 USC 112, First Paragraph:

Pages 1-17 of the Appeal Brief provides only a summary and prosecution history. Applicant's actual arguments start on page 18.

With respect to arguments, under GROUND 1 on page 18 of the Appeal Brief, with reference to the rejection of the claims under the first paragraph of 35 U.S.C. 112, on page 18 of the Appeal Brief, the appellants present the argument:

"The examiner alleges that claims 20-26, 39-45, 62, 63, 68, 69 and 74-87 fail to comply with the written description requirement. As best understood from the Advisory Action mailed on June 7, 2011, this rejection has been withdrawn except for claims [39-45] and 87. Appellant believes that sufficient support for the wording in all claims is clearly found in the originally-filed specification, **as detailed in the section above** providing the locations in the originally-filed specification that support the language of the claims.

For this reason the Board is respectfully requested to reverse this rejection for all claims, including claims 39-45 and 87."

The examiner respectfully disagrees with the above assertion for the following reasons:

As a preliminary matter, 68 and 69 also remain rejected under the first paragraph of 35 U.S.C. 112 because they depend on claim 39. Thus, the rejected claims under first paragraph of 35 U.S.C. 112 includes claims 39-45, 68, 69 and 87.

Second, contrary to appellants' assertions, there is no **detailed section** in the appellants' Appeal Brief, and nor there is a detailed description in any of the previously filed arguments.

With respect to claim 39, the original claim 39 was amended on 11/03/2010 by inserting the following limitation:

"each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system;"

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The examiner inspected and searched the entire specification, particularly, figures 1-8 and lines 7-20 of page 14, lines 3-6 of page 5; lines 20-23 of page 6; lines 2-9 of page 10, line 21 of page 10 through line 6 of page 11; line 22 of page 12 through line 1 of page 13; lines 7-20 of page 14; line 23 of page 15 through line 18 of page 16; line 19 of page 20 through line 9 of page 21. However, the examiner did not find any indication of the above limitation. The examiner did not find any indication of the “predetermined criteria” is being linked with the “*maintaining or improving service within a service area of said radio communication system*”.

With respect to claim 87, new claim 87 was added in the amended filed on 11/03/2010. The new claim 87 included the following limitation:

“wherein said predetermined criteria include at least one of signal loss and a lowering of said signal reception.”

The examiner inspected and searched the entire specification, particularly, figures 1-8 and page 14, line 24 through page 15, line 17 and page 10. However, the examiner did not find any indication of the above limitation. The examiner did not find any indication of the “predetermined criteria” is being linked with the “signal loss,” and “lowering of said signal reception.” The examiner asserts that the limitation “criteria” has not been defined in the specification.

Thus, the examiner maintains the rejection of claims 39-45, 68, 69 and 87 under first paragraph of 35 U.S.C. 112.

B. Rejection of Claims under 35 USC 103(a).

Response to Ground 2 (Appellants' arguments starting on page 19 of the Appeal Brief).

a. In response to arguments that “The evaluation of record improperly attempt to take words out-of context from unrelated references to allegedly demonstrate the claimed capability,” the examiner respectfully disagrees.

The examiner asserts that based on a broad interpretation, the claimed limitations do not have any particular order and/or correlation. For example, in claim 1 the steps of "detecting a trigger," "acquiring a reception status," "acquiring a coordinate position," and "sending information," may happen in any order as the cited prior art may suggest.

Further, claim language does not show any specific correlation between the limitations. For example, the claim language does not indicate whether the step of “acquiring a reception status” **is based** on the step of “detecting as a trigger” or any other steps or not. Similarly, all the other steps appear to be uncorrelated. Thus, one skilled in the art would recognize that based on a broad interpretation of the claims, the limitations of the claim can be interpreted in any order as the prior art may suggest.

Further, the examiner asserts that a prior art reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, reference Veerasamy is specifically in the same field of as that of the claimed invention. And reference Ma is reasonably pertinent to the particular problem with which the applicant was concerned. As one skilled in the art would recognize that reference Ma discloses structures, signal processing, signal measurement, and other operation of a cellular radio communication

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analogous to the cellular communication system of the claimed invention and Veerasamy. Thus, the selection and the combination of the cited prior art is proper.

The examiner suggests the claims to be presented in such a way that they would indicate that claimed limitations are correlated to each other and that they are performed in a particular order.

b. With respect to Appellants' arguments on page 19 of the Appeal Brief that the "Action mailed on June 7, 2011, wherein the Examiner, beginning on page 8, suddenly introduces conclusory statements about the contents of references not officially part of the rejections of record (*e.g.*, reference to Lee (US Patent 6,301,237) on page 8, Rappaport (text book) on page 9, Joeng (US Patent 6,195,552) on page 9, Tong (US Patent Publication 2001/0034236) on page 9, and Imai (US Patent 7,050,482) on page 11)," the examiner respectfully asserts that the above references were introduced only to explain the limitations of some dependent claims that the examiner had taken Official Notice of in the earlier Office Action. In fact the Official Notice had been taken in an earlier Non-Final Office Action dated 04/12/2010, and the appellants did not traverse the limitations that were rejected by Official Notice. Since applicant had not traversed the examiner's assertion of official notice in the rejection of claims with Official notice, the common knowledge or well-known in the art statement as applied in the rejection of those claims was taken to be admitted prior art. See MPEP 2144.03. However, since the appellants challenged the official notice rejection *untimely* in the after Final amendment filed on 05/06/2011, the examiner provided the new references only to show evidence of the official

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notice rejection, even though the common knowledge or well-known in the art statement as applied in the rejection of those claims was taken to be admitted prior art. See MPEP 2144.03.

c. On page 20 of the Appeal Brief the appellants argue that the combination of these three references would fail to provide a prima facie obviousness rejection since there would still be at least one element still missing for even the independent claims. Thus, relative to independent claim 1, this combination would fail to demonstrate the final claim limitation ("**... sending information including said reception status and said coordinate position to said information collecting server**").

The examiner respectfully disagrees with the above arguments for the following reasons:

As a preliminary matter, the examiner asserts that based on a broad interpretation, the limitations do not have any particular order and/or correlation. For example, the steps of "detecting a trigger," "acquiring a reception status," "acquiring a coordinate position," and "sending information," may happen in any order as the cited prior art may suggest.

Further, claim language does not show any specific correlation between the limitations. For example, the claim language does not indicate whether the step of "acquiring a reception status" **is based** on the step of "detecting as a trigger" or any other steps or not. Similarly, all the other steps appear to be uncorrelated. Thus, one skilled in the art would recognize that based on a broad interpretation of the claims, the limitations of the claim can be interpreted in any order as the prior art may suggest.

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The examiner asserts that the above underlined limitation is partly disclosed by Veerasamy and partly by Ma.

Veerasamy explicitly teaches the limitation, sending information including the coordinate position (see Par. 34 and 35, "Each of the specially equipped mobile stations is equipped with a ... GPS ... to rapidly determine its position in the event that a call is dropped or service is dropped," *"relays the GPS position and/or time information to RF coverage server,"* note that one skilled in the art would understand that the GPS position is equivalent to the claimed coordinate position. Further note that one skilled in the art would understand that relaying the GPS position is equivalent to the claimed sending the coordinate position).

In summary, one skilled in the art reading the invention of Veerasamy, particularly in paragraphs 3, 34 and 35, would recognize that Veerasamy discloses a mobile station reporting any changes to its RF connection (e.g., a disconnection due to an RF hole) as it is moving around. And Veerasamy's RF coverage sever 195 collects such information from the mobile stations and build a map (see Fig. 1 and Par. 35, "establish a map of the coverage area").

With respect to limitation, sending of the reception status ("**sending information including said reception status**"), although Veerasamy does not explicitly specify such limitation in the format claimed by the applicant and the examiner has used reference Ma to cover this limitation, the examiner would like to elaborate on the fact that Veerasamy also suggests the limitation in Par. 32 ("As is well known ... MS 112 detects the pilot signal from BS 103 and sends a Pilot Strength Measurement Message to BS 101," See Veerasamy Par. 32 lines 3-5.

Ma discloses the concept of sending information including said reception status (see Par. 36, lines 1-4, “transmit pilot signal strength messages based on pilot signal strength measured by the mobile station”).

Accordingly, the examiner asserts that the combination of cited prior art disclose the limitation, "sending information including said reception status and said coordinate position to said information collecting server."

Since, the claim language does not show any particular order or correlation of the claimed limitations, it would be obvious to one skilled in the art at the time of invention to combine the known elements in order to reach the claimed invention.

With respect to arguments that “This combination would also fail to teach or suggest a plurality of criterion (i.e., criteria) of service-related events (‘... whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments ... ‘)’”, the examiner respectfully disagrees.

The examiner asserts that Veerasamy discloses the “monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel, which satisfies predetermined criteria (Fig. 1 and particularly paragraphs 32, 33, line 9-12 and 34, lines 2-3, “MS 113 ... in communication with BS 102”, “detects RF holes ... relays GPS position”, note that the mobile terminal reports call drop, thus it must monitor its communication status in order notice call drops and report them.

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Further note that a communication status changes either due to a call drop in an RF hole for loss of signal as disclosed in Veerasamy's paragraphs 34-35, or due to a handoff because of a decreased signal strength as disclosed in Veerasamy's paragraphs 32. Thus, based on a broad interpretation of the claims, the claimed *criteria* is equivalent to signal changes including e.g., signal loss (e.g., due to RF hole) and decreased signal strength (which prompts a handoff). An artisan would understand that a RF hole is caused by a signal loss and a handoff is caused due to decreased signal strength, thus, Veerasamy teaches both criterion; signal loss and the decreased signal). Paragraphs 31, 33-35, 61-63 in Veerasamy provides additional disclosure for this limitation.

Further, with respect to the claimed limitation, "criteria," the examiner would like to request attention to the new claim 86. Claim 86 was added in an amendment on 11/03/2010 and it defines the claimed limitation "criteria" to include a signal loss or a lowering of signal reception. The specification does not provide any definition or description as to what the criteria may be.

With regards to the limitation, "**related** to one or more of said adjustments," the examiner asserts that the above limitation, which was added after the filing of the original claims, is disclosed in AA (Admitted Art) (Applicant's Specification, particularly, page 2-3, and specifically page 2, lines 11-26, "The measured reception status information is recorded in association with the positional information that is measured by position measuring device 94a on reception status measuring vehicle 94 *Using the measured reception status information, the communication service provider performs maintenance and adjustments of the radio of the radio communication system to operate the radio communication system stably without fail,*").

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Based on a broad interpretation of the claimed limitation (e.g., related) the predetermined criteria is related to the adjustments.

In response to arguments that on page 20 of the Appeal Brief, that “Therefor, primary reference Veerasamy differs from independent claim 1 by its failure to: (1) respond to a plurality of criterion (e.g., criteria); (2) acquire reception status of the radio signal upon detection of one of the predetermined criteria; and (3) report both coordinate position and reception status to an information server,” the examiner respectfully disagrees and asserts that based on a broad interpretation of the claimed limitations, Veerasamy discloses the claimed “respond to a plurality of criterion (see Par. 32 and 34-35, note that based on a broad interpretation of the claims, the claimed *criteria* is equivalent to signal changes including e.g., signal loss (e.g., due to RF hole) and decreased signal strength (which prompts a handoff). An artisan would understand that a RF hole is caused by a signal loss and a handoff is caused due to decreased signal strength, thus, Veerasamy teaches both criterion; signal loss and the decreased signal).

With respect to the, “acquire reception status of the radio signal upon detection of one of the predetermined criteria,” Veerasamy suggests handoff due weak signal strength, but also Ma discloses the acquiring reception status of the radio signal upon detection of one of the predetermined criteria (see Par. 36, note that criteria is any form or signal fluctuation based on a broad interpretation).

With respect, “report both coordinate position and reception status to an information server,” the examiner asserts that Veerasamy discloses reporting coordinate position to an information server (see Par. 35, e.g., “server 195.” Note that the server 195 collects information, thus, information collecting server. Alternatively, the coordinate position is sent to the base

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station first so that the base station would relay it to the server 195, thus, the base station could also read on the claimed, "information collecting server").

With respect to the reporting reception status to an information server, the examiner asserts that based on a broad interpretation of the claims, the base station in Ma reads on the claimed "information server" or information collecting server. As is well known in the art, a base station collects information from all sources including from the mobile station. The base station of Ma collects signal strength information from the mobile station. Thus, based on a broad interpretation of the claimed limitation, the base station of the Ma is equivalent to the claimed "information collecting server."

On page 21 of the Appeal Brief, the applicant argues the following:

"Contrary to the Examiner's characterization, Ma adds nothing of merit to overcome the three deficiencies of primary reference Veerasamy, since secondary reference Ma does not report reception status to an information server gathering maintenance information and does not suggest reporting a plurality of types of reporting events (criteria)."

The examiner respectfully disagrees with above argument and asserts that based on a broad interpretation of the claim, the base station of Ma is equivalent to the claimed information server because a base station collects information. Thus, Ma's disclosures in paragraph 36 reads on the claimed "report reception status to an information server." The limitation, "porting a plurality of types of reporting events (criteria) has been discussed above and disclosed in Veerasamy.

On page 22, the appellants repeat the same arguments that were presented in the earlier pages. The examiner respectfully disagrees and asserts that based on a broad interpretation of claims, the cited prior art teach all the claimed limitations. And since the claimed limitations are

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not in any particular order and there is no established relationship between the limitations, the cited references disclose every claimed limitation.

On pages 23-24 of the Appeal Brief the appellants present the following arguments:

"The Examiner's Rebuttal on the Definition of 'criteria'"

At the bottom of page 4, the Examiner writes (emphasis by the Examiner):

'Veerasamy teaches the limitation, "respond to a plurality of criterion (e.g., criteria) "for the following reasons.

The limitation 'criteria' has not been defined in the specification. Based on a broad reasonable interpretation of the claims, criteria are the events' that cause a call drop or RF hole. An artesian would understand that call-drop happens due to variety of reasons. An artesian would understand that some of the events' that cause a call drop or RF hole are e.g., weak RSSI or weak signal strength, signal interference, total signal loss, decreased signal strength ... etc. Thus, based on a broad interpretation, the claimed criteria could be any combination of weak RSSI, signal interference, total signal loss, decreased signal strength ... because they all cause the call drop. Veersamay teaches a mobile terminal detects' and reports' call drop (see the rejection of claim 1). Thus, Veerasamy inherently teaches the claimed criteria because the mobile device in Veerasamy detects' call drops (see par. 7-8 and 35-36.'

Appellant' s Response:

The Examiner is above clearly conceding that primary reference Veersamay teaches a single criterion of detecting call drops. Paragraph 7 and 8 clearly describe that an event of a call drop causes the mobile station to record and report the location and time of a call drop event to the server. Paragraphs 35 and 36 clearly describe that the RF coverage server will establish a map of the coverage area for this single criterion. In contrast, the information server of the claimed invention will receive reports of a plurality of criterion (e.g., criteria), such as forced disconnections (claim 2), handover failures (claim 3), lowering of throughput (claim 4), call which is made (claim 5). As further described in various dependent claims (e.g., claim 77), the information server will develop a separate map for each separate criterion. Moreover, independent claim 39 was amended to clarify that "... each criterion of said predetermined criteria having been predefined as a condition related to one of maintaining or improving service within a service area of said radio communication system." None of the references currently of record suggests providing automatic reports to an information collecting server for a plurality of conditions related to maintaining/improving service. Further, Veersamay reports only time and location for its single criterion. Veersamay' s reporting fails to additionally report "reception status", as required by independent claim 1."

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The examiner respectfully disagrees with the above arguments, and asserts that Veerasamy also suggests that a mobile station detects the pilot signal and when the strength of the pilot transmitted by the BS exceeds a threshold, a handover takes place (see Par. 32). Based on a broad interpretation of the limitation, a second criterion could be the received pilot signal strength exceeding a threshold that would affect the throughput. The specification does not indicate that the criteria would not include pilot signal strength. Alternatively, it would be obvious to a person of skilled in the art to recognize that there would be other causes for a communication change, e.g., handover and/or handover failure, forced disconnection... etc.

On page 24-25 of the Appeal Brief, the appellants argue the following:

Beginning at the middle of page 5 of the Advisory Action, the Examiner writes:

"Therefore, although the cellular system of Veerasamy conventionally teaches the above limitation because Veerasamy describes a cellular communication system, the examiner has used Ma to show that the limitation, "acquire reception status of the radio signal upon detection of one of the predetermined criteria," is conventional in the art.

Ma teaches the limitation "acquire reception status of the radio signal upon detection of one of the predetermined criteria" in Par. 36. In this paragraph, Ma teaches that a mobile terminal, in response to a handover, sends' measured signal strength values to a base station. An artisan would understand that a handoff occurs due to weak signal strength, poor signal quality or signal deterioration, which all can be interpreted as the claimed criteria, based on a broad reasonable interpretation."

Appellant's Response:

Paragraph 36 of secondary reference Ma relates to the reporting of pilot signal strength messages for purpose of handoff of calls, as clearly explained in subsequent paragraph [0037]. This feature is also present in primary reference Veerasamy, as clearly described in paragraph [0032] of Veerasamy.

However, neither Veerasamy nor Ma transmits this information to a server gathering information to develop a service-related mapping of the service area, as a criterion for one of its mappings.

Therefore, neither Veerasamy nor Ma demonstrates the claimed requirement that a reporting for each criterion include both location and reception status. By including both

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parameters in its reportings, the present invention provides a mechanism for a plurality of different service-related maps, e.g., one map per each criterion.

The examiner respectfully disagrees, and asserts that based on a broad interpretation of the claimed limitations, the base station in Ma is equivalent to an information collecting sever because a base station collects information from communication sources and keeps track of status of the mobile stations within its coverage area. Further, one skilled in the art would recognize that a base station would be able to collect the information and perform mapping and other functions. Thus, an artesian having access to Ma would be able to combine the cited references and come up with the claimed inventions.

On page 25-26, the appellants argue the following as underlined :

"The Examiner's Rebuttal on the Combination of Veerasamy and Ma

Beginning on the top of page 7 of the Advisory Action the Examiner attempts to justify the combination of Veerasamy and Ma, essentially alleging that these references are combinable because they are allegedly analogous and that they are analogous simply because "[b]oth references cover the cellular communication technology."

Appellant' s Response

Under the Examiner' s arbitrary definition that references are analogous because there can be articulated some level of abstractness of some type of similarity, all references in the USPTO database and all documents and articles ever written become "analogous art" at some level of abstractness. There is no legal precedence that two references become analogous art simply by reason of articulating an alleged similarity.

Appellant submits that the objective evidence is that Veerasamy and Ma are non-analogous because they are classified by the USPTO into two different classifications, they are directed to two different problems, and they provide two different solutions.

More important, it is irrelevant whether these two references are arbitrarily defined as "analogous", since even if combined the claimed invention is not demonstrated, as explained immediately above. The rejections of record for the present application

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suggests that the USPTO has arrived at a reasoning process wherein the arbitrary label that two references are "analogous art" becomes the sole basis for combining word out-of-context. Appellant submits that such reasoning is not based on engineering principles, is not the perspective of one having ordinary skill in the art, and is devoid of common sense."

The examiner respectfully disagrees, and asserts that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, reference Veerasamy is specifically in the same field of as that of the claimed invention. And reference Ma is reasonably pertinent to the particular problem with which the applicant was concerned. As one skilled in the art would recognize that reference Ma discloses structures, signal processing, signal measurement, and other operation of a cellular radio communication analogous to the cellular communication system of the claimed invention and Veerasamy. Thus, the selection and the combination of the cited prior art is proper.

Response to GROUND 3:

In response to appellants' arguments on pages 2-3, under GROUND 3, the examiner asserts that based on a broad interpretation of the claimed limitation, a forced disconnection is analogous to call loss due to an RF hole. An artisan would understand that in an RF hole radio zone, communication signal would be blocked and the signals are blocked and they are not reached, the call would be forced to discontinue, thus, forced disconnection. The specification

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does not provide any specific descriptions. Thus, the RF hole of Veerasamy meets the claim language.

Response to GROUND 4:

With respect to arguments under GROUND 4 on page 27 for claim 5, the examiner considered the appellants' arguments, but they are not persuasive. The recitations to the specification made by the applicant does not provide any information relevant to the claimed limitation and/or any advantages thereof. The examiner asserts that it would be obvious to one skilled in the art to also modify combination so that combination would report the location and signal information when a new call is not going through.

Response to GROUND 5:

With respect to arguments under GROUND 5 on page 29 for claim 49, the appellants argue that the cited prior art does not disclose the "mobile radio terminal includes a trigger information reception unit." The applicant respectfully disagrees. Veerasamy discloses that a mobile station detects RF holes as indicated in the rejection of claim 1 (see Veerasamy, Fig. 1 and par. 31-32, 33-35, 61-63, "detect RF holes," "call dropped,"). Thus, the mobile station has a detection unit that detects RF holes where RF holes is equivalent to triggers (also see the rejection of claim 1)

Response to GROUND 6:

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With respect to arguments under GROUND 6 on page 30 for claim 20, the appellants argue that the cited prior art does not disclose the limitation, "each said predetermined criterion providing data for different service map."

The examiner respectfully disagrees and asserts that Veerasamy discloses that the limitation of building a database of the of the call drops and/or service drop positions and then using the database Veerasamy builds a coverage map of the area that illustrates the location of RF holes (see par. 35). Veerasamy further suggests sending of pilot signal strength (par. 32). And Ma discloses a mobile station reporting signal strength message when it detects a handoff (see Par. 36). Further, one skilled in the art would recognize that the map of Veerasamy which is configured to illustrate RF holes and signal block areas that cause the RF hole can also be expanded to also illustrate the coverage areas that have decreased signal strength because both the communication disconnection due to RF hole and the handoff due to signal attenuation are signal fluctuations and it would make sense to illustrate in the map both the criterion of signal loss and the criterion of major attenuations. Thus, it would have been obvious to one of skilled in the art at the time of invention of modify the combination by incorporating the teachings of Ma and the general knowledge of an ordinary skill in the art such that the mapping of each of the predetermined criterion would provide data for a different service map, and thus allowing the radio coverage monitoring to have a clear understanding of the RF hole zones and also decreased signal zones, and thus providing an efficient communication system.

Response to GROUND 7:

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With respect to arguments with regards to rejection under Official notice (well-known prior art MPEP 2144.03), under GROUND 7 on page 31, the examiner considered the appellants' arguments, however they are not persuasive.

As a preliminary matter, the contents claims 3, 4, 22, 23, 41, 42, 51, and 52 had been rejected as Common knowledge in the Art "Well Known" Prior Art in the Non Final Office action dated 04/12/2010. The applicant did not traverse the rejection of the above claims in the amendments filed on 09/13/2010. Since applicant had not traversed the examiner's assertion of official notice in the rejection of claims 3, 4, 22, 23, 41, 42, 51, and 52 above, the common knowledge or well-known in the art statement as applied in the rejection of claims 3, 4, 22, 23, 41, 42, 51, and 52 is taken to be admitted prior art. See MPEP 2144.03.

With respect to the reject of claims 74-79 84-89 in view of the Common knowledge in the Art "Well Known Prior Art" the examiner provides the following explanations:

With respect to claim 74, the concept of sending the report immediately after it occurs is conventional in the art. Based on a broad interpretation of claim, immediately could be within any time after the mobile device gains its capability or connectability. Thus, Veerasamy could read on the limitation as well. Veerasamy sends the report immediately after it reacquires connection since the claim has not clearly defined "immediately". However, Joeng (US 6195552) teaches the concept of sending such report immediately (see Column 4).

With regards to claim 75, Veerasamy discloses sending the report immediately after it reacquires connection since the claim has not clearly defined "immediately". However, Joeng (US 6195552) teaches the concept of sending such report immediately (see Column 4).

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With regards to claim 76, based on a broad interpretation of the limitation, the plurality of conditions could be anything, thus, Veerasamys' invention along with Jeong's read on the claim language (see Jeong, "strengths of the first BTS and of the second BTS through a pilot strength measurement message (PSMM) from the mobile station to a base station controller (BSC); (3) if the mobile station perceives a pilot signal strength which is above a predetermined threshold value, informing the mobile station of reception of the PSMM in order to prevent the mobile station from reporting additional PSMM messages") see Column 4.

With respect to claim 77, since claim 77 depended on claim 76, it was under the rejection under Official notice, however, Veerasamy discloses the limitation of claim 77. Veerasamy discloses that the limitation of building a database of the of the call drops and/or service drop positions and then using the database Veerasamy builds a coverage map of the area that illustrates the location of RF holes (see par. 35). Veerasamy further suggests sending of pilot signal strength (par. 32). And Ma discloses a mobile station reporting signal strength message when it detects a handoff (see Par. 36). Further, one skilled in the art would recognize that the map of Veerasamy which is configured to illustrate RF holes and signal block areas that cause the RF hole can also be expanded to also illustrate the coverage areas that have decreased signal strength because both the communication disconnection due to RF hole and the handoff due to signal attenuation are signal fluctuations and it would make sense to illustrate in the map both the criterion of signal loss and the criterion of major attenuations. Thus, it would have been obvious to one of skilled in the art at the time of invention of modify the combination by incorporating the teachings of Ma and the general knowledge of an ordinary skill in the art such that the mapping of each of the predetermined criterion would provide data for a different service map, and thus allowing the radio coverage monitoring to have a clear understanding of

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the RF hole zones and also decreased signal zones, and thus providing an efficient communication system.

With respect to claim 78, since claim 78 depended on claim 76, it was under the rejection under Official notice, however, Veerasamy discloses the limitation of claim 78. Veerasamy discloses that it receives coordinate position information from mobile stations, and then the collecting server 196 builds a map of the coordinate positions relative to reported signal losses due to RF holes, thus, one skilled in the art would recognize that the collecting server must retrieve information first as it is collecting and saving it in a database in order to illustrate in the map. Thus, the collecting server must retrieve that information that was stored, e.g., in a database in order to build the map.

With respect to claim 79, one skilled in the art would recognize that one of the claimed preset conditions, the claimed preset condition, "power vs. interference ratio," is equivalent to SNR (signal to noise ratio). Rappaport discusses SNR in pages 6 and 68 of his Text book. And one skilled in the art would understand that when the SNR does low, it does not provide a quality signal, consequently a handover or even a call drop may occur. One of the other two preset condition, "a received signal intensity in a common pilot channel," is equivalent to Ma's pilot signal strength (Ma, Par. 36).

With respect to claim 86, claim 86 includes the limitation, "wherein said information collecting server transmits said trigger so that a plurality of mobile radio terminals simultaneously start measuring information and sending the measured information to the information collecting sever." The examiner asserts that an artisan would be able to recognize that the concept of claim 1 is applied to multiple mobile devices. An artisan would further understand that when a concept is applied to one device it can also be applied to multiple devices. Therefore, when multiple mobile devices are found in the same area of RF hole, then

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each one will send the signal report. Reference Tong (US 2001/0034236) at paragraph 51 teaches that plurality of mobile devices send pilot signal indicating C/I or signal quality.

Response to GROUND 8:

With respect to arguments under **GROUND 8** on page 35 of the Appeal Brief for **claim 80 and 81**, the appellants argue that the cited prior art does not disclose “wherein the measurement information includes information **relating to at least one of a reception quality and intensity of a radio signal and information relating to a location of the mobile radio terminal.**”

The examiner respectfully disagrees with the above arguments and asserts that in line 6 of claim 80 and line 7 of claim 81 the alternative claim limitation, “**at least one of**,” makes the claim broad. Thus based on a broad interpretation of the claim language the prior art needs to show only one of the claimed limitations. Veerasamy discloses at least one of the claimed alternative claimed limitations (e.g., information relating to a location of the mobile radio terminal. See Veerasamy Par. 35, “GPS position”). Accordingly, since reference Veerasamy discloses at least one of the claimed limitations, based on a broad interpretations of the claim language, the teachings of Veerasamy meet the claim language.

Alternatively, with reference to Mile'n, col. 1, lines 59-60 of Mile'n disclose the recitation, “mobile station M4 will typically be requested to measure and report signal strength.” Thus, based on a broad interpretation, the teaching of Mile'n reads on the claimed “information **relating to at least one of a reception quality and intensity of a radio signal.**” One skilled in the art would recognize that signal strength” represents the power quantity or level of the signal and thus it would be **related** to the claimed “signal intensity. Further, one skilled in the art would

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recognize that *power level* of a signal would affect its *quality*, for example if the power is increased and noise is not constant, then the power to noise ratio will change, thus power level is also related to the claimed quality. Therefore, one skilled in the art would recognize that “signal strength” is also related to both signal quality and signal intensity. The examiner notes that the word, “related,” is too broad and one skilled in the art would recognize that the signal strength which is equivalent to signal intensity has a correlation with the signal quality.

Response to GROUND 9:

With respect to arguments under **GROUND 9** on page 36 of the Appeal Brief for **claim 82**, the appellants argue the following arguments:

“In paragraph 8 on page 20 of the Office Action mailed on January 20, 2011, the Examiner relies upon Official Notice. Appellant traverses this rejection since the mere fact that terms of art are well known is irrelevant, since Appellant is not claiming these concepts in the abstract or in isolation. Nor is the difference between the claimed invention and primary reference Veerasamy a simple substitution of an element by another known in the art as a substitute. Rather, these differences require additional modification to primary reference Veerasamy and, given that Veerasamy already performs its intended purpose, there is no reasonable rationale currently of record to further modify Veerasamy to arrive at the claimed invention other than the improper hindsight of using the claimed invention as the sole roadmap for this change. Finally, relative to the Examiner's allegation that modification of Veerasamy would provide the benefit that the combination would provide “... *the purpose of complying with conventional radio communication measuring techniques and thus providing an efficient communication system*”, Appellant submits that Veerasamy already complies with conventional radio communication measuring techniques and already provides an efficient communication system. Accordingly, Appellant respectfully requests that the Board reverse this rejection for claim 82.”

The examiner respectfully disagrees with the above arguments, and asserts since the independent claim 81, which claim 82 depends upon, includes the alternative claim limitation, “**at least one of** a reception quality and intensity of a radio signal and ***information relating to a location of the mobile radio terminal***,” and Veerasamy's teaching of “GPS position” is

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equivalent to one of the alternative limitation (e.g., and *information relating to a location of the mobile radio terminal*), the limitations of claim 82 which builds on the other alternative limitations of claim 81 do not further limit the scope of the claim. Thus, the teachings of Veerasamy meet the claim language (see Veerasamy, paragraphs 34-35, note that the mobile station in Veerasamy determines its GPS position and then it transmits to the coverage server 195, where the GPS position information is equivalent to the claimed "information relating to the location of the mobile radio terminal").

Alternatively, to show that the limitations of claim 82 are well-known prior art the examiner has indicated reference Imai (US 7,050,482) in the advisory to show that the limitations of claim 82 are well-known and conventional in CDMA communication system. Imai discloses the above conventional limitations of claim 82 in at least Col. 9, line 65 through Col. 11, line 45 ("in a mobile communication system employing CDMA cellular system using a common pilot channel constantly transmitted from a base station in a mobile communication system upon use of transmit diversity for measuring communication quality in a mobile station being measured," note CDMA uses common pilot channel, which is conventional in CDMA, and Veerasamy's inventions is based on a CDMA communication system (see Veerasamy paragraph 24, line 7). Thus, it would have been obvious one skilled in the art to use the CDMA pilot common channel instead of a regular pilot channel to send the information *related* to the signal intensity and/or signal quality. A clear motivation would be to a channel that CDMA systems are most efficient with, therefore, providing an efficient communication system.

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With regards to claims 6, 44, 54, 84 and 85, the rejection of these claims is withdrawn and they would be allowed if they are combined with all the limitations of the claims that they depend on, as indicated in the Advisory Action.

Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interference section of this examiner's answers.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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